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EXAMINER	
LERNER, MARTIN	

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/736,160	HEO ET AL.	
	Examiner	Art Unit	
	Martin Lerner	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *21 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 39 and 41 to 51* is/are pending in the application.

4a) Of the above claim(s) *9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 to 8, 16 to 23, 30 to 33, 48, 49, and 51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicants timely traversed the restriction requirement in the reply filed on 29 April 2005.

This application contains claims 9 to 15, 24 to 29, 34 to 39, 41 to 47, and 50 drawn to an invention nonelected with traverse in the reply filed on 29 April 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 to 7, 16 to 22, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.*

Concerning independent claim 1, *Tanaka et al.* discloses a recording medium, comprising:

"predetermined recording units, each recording unit having audio data recorded" – cells N ("predetermined recording units") have audio streams recorded in audio packs A ("audio data recorded") (column 17, lines 22 to 25: Figures 13, 19, 48, and 49);

"data packs designated to store additional data relating to the audio data, each of the data packs being recorded in predetermined locations in corresponding ones of the recording units of the audio data, the predetermined locations being a same position in each of the recording units relative to a beginning of the recording unit" – the first pack in each ACB unit ACBU is an audio control pack A-CONT; an audio control pack A-CONT in each ACB unit ABCU in a DVD-Audio is located at a place corresponding to a third pack in a VCB unit VCBU (column 17, lines 22 to 37: Figures 13, 19, 48, and 49); a control audio pack A-CONT is a data pack "designated to store additional data related to the audio data"; an audio control pack A-CONT has headers, audio character display (ACD) information, audio search data (ASD), and substream identification information (column 18, lines 11 to 22: Figure 15); A-CONT control packs are placed in a first or third position of an ACBU or VCBU, which is "the predetermined locations being a same position in each of the recording units relative to a beginning of the recording unit".

Concerning independent claim 1, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet

stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as suggested by *Pinder et al.* in a recording medium for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning independent claim 16, *Tanaka et al.* discloses a reproducing method, further comprising:

"reading data from the recording medium in units of the recording units" – a player operates on a DVD-Audio 1; drive unit 2 reads out a signal from the DVD-Audio 1 (column 57, lines 1 to 28: Figure 94);

"reproducing the audio data and the additional data recorded in the read recording units, after relating the additional data to the audio data, the additional data recorded in data packs" – drive unit 2 includes a demodulator, and outputs the demodulation-resultant signal to the reproduced signal processing unit 17 as a reproduced signal (column 57, lines 22 to 28: Figure 94); reproduced information includes real-time information as audio character display (ACD) information

("reproducing . . . the additional data"), which is related to the audio data (column 58, lines 21 to 34: Figure 94).

Concerning independent claim 16, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as suggested by *Pinder et al.* in a reproducing method for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning independent claim 48, *Tanaka et al.* discloses a reproducing method, further comprising:

"reading the predetermined recording units" – a player operates on a DVD-Audio 1; drive unit 2 reads out a signal from the DVD-Audio 1 (column 57, lines 1 to 28: Figure 94);

"demultiplexing the predetermined units to separate the audio data from data packs having the additional data based upon the data packs being in a predetermined location in the corresponding recording unit relative to a beginning of the recording unit" – the reproduced signal processor circuit 17 includes an audio and RTI pack detector 9 which receives the reproduced signal from the drive unit 2, and detects audio packs A and real-time information packs RTI in the reproduced signal (column 57, line 58 to column 58, line 34: Figure 94); real-time information packs RTI are "data packs having additional data"; still-picture detector 3 detects video packs V and still-picture packs SPCT, and audio and RTI detector 9 detects audio packs A and RTI packs; implicitly, detecting still picture, video, audio, and RTI packs involves "demultiplexing the predetermined units to separate the audio data from data packs having additional data" (column 57, lines 29 to 67: Figure 94); the first pack in each ACB unit ACBU is an audio control pack A-CONT; an audio control pack A-CONT in each ACB unit ABCU in a DVD-Audio is located at a place corresponding to a third pack in a VCB unit VCBU (column 17, lines 22 to 37: Figures 13, 19, 48, and 49); an audio control pack A-CONT has headers, audio character display (ACD) information, audio search data (ASD), and substream identification information (column 18, lines 11 to 22: Figure 15); A-CONT control packs are placed in a first or third position of an ACBU or VCBU, which is "a

predetermined location in the corresponding recording unit relative to a beginning of the recording unit".

Concerning independent claim 48, the only element omitted by *Tanaka et al.* is the limitation of "wherein at least one of the data packs does not include the additional data." However, *Pinder et al.* teaches that it known within an MPEG standard for audio and video broadcast programming to provide a technique called 'packet stuffing' to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. The objective is to maintain a fixed bit rate. (Column 6, Lines 43 to 59) Packet stuffing, as taught by *Pinder et al.*, must necessarily cause any sort of packet in an MPEG audio and video program, including audio packets containing audio data or a data packet containing additional data relating to control information, to be filled with stuffed data. Thus, *Pinder et al.* suggests that at least one of the data packs designated to store additional data does not contain additional data relating to control information, but is a stuffed packet. It would have been obvious to one having ordinary skill in the art to provide at least one data pack that does not include the additional data as taught by *Pinder et al.* in a reproducing method for an MPEG audio and video coder of *Tanaka et al.* for the purpose of maintaining a fixed bit rate for excess capacity.

Concerning claims 2 and 17, *Tanaka et al.* discloses audio packs A and audio control packs A-CONT in each ACB unit ACBU (column 17, lines 22 to 25: Figures 13, 19, 48, and 49); audio packs A have recorded audio data, and audio control packs A-CONT are recorded separately with audio control information.

Concerning claims 3 and 18, *Tanaka et al.* discloses audio packs A and audio control packs A-CONT in each ACB unit ACBU (column 17, lines 22 to 25: Figures 13, 19, 48, and 49); audio control packs A-CONT do not contain any audio data that is reproduced, as audio control packs A-CONT contain only control information; control data need not be audibly or visually reproduced, so it is "additional data" that "does not have . . . to be reproduced" with audio data from audio packs A.

Concerning claims 4, 5, 19, and 20, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); real-time information includes audio character display (ACD) information, which is displayed (column 58, lines 21 to 34); audio character display (ACD) information is text describing a tune name (column 18, lines 11 to 39: Figures 15 and 16); audio search data (ASD) synchronizes a present time to an absolute time of a related title (column 18, lines 11 to 39: Figures 15 and 16; column 19, lines 11 to 35: Figure 18).

Concerning claims 6 and 21, *Tanaka et al.* discloses each audio control pack A-CONT stores managing information representing a title and a play time (column 20, lines 10 to 19); audio search data (ASD) has playback time of a related track and an absolute time of the related title (column 19, lines 11 to 35: Figure 18); real-time information is read from real-time information packs RTI to display audio character display information (column 58, lines 21 to 34), thus, titles are displayed as text when recording units corresponding to the titles are played.

Concerning claims 7 and 22, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); each ACBU or VCBU has a plurality of audio packs A ("each recording unit has a plurality of audio packs") (Figures 13, 19, 48, and 49); an audio control pack A-CONT is located in a first position in each ACBU (Figures 13, 19, 48, and 49).

Concerning claim 49, *Tanaka et al.* discloses the reproduced signal processor circuit 17 includes an audio and RTI pack detector 9, which receives the reproduced signal from the drive unit 2, and detects audio packs A and real-time information packs RTI in the reproduced signal (column 57, line 58 to column 58, line 34: Figure 94); thus, RTI packs (or audio control packs A-CONT) are separated from audio packs A for processing.

Claims 8, 23, 30 to 33, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.* as applied to claims 1 and 16 above, and further in view of *Ema et al.*

Concerning independent claims 30 and 51, *Tanaka et al.* discloses a reproducing apparatus with an audio signal processor and an RTI signal processor (Figure 94), but does not expressly show all the structural details for a reproducing apparatus. However, *Ema et al.* discloses a reproducing apparatus further comprising:

"a reproducing controller reading an audio object (AOBU) which is one of the recording units" – system controller 100 provides control signals for controlling an audio reproducing process (column 9, lines 22 to 45: Figure 4);

"a demultiplexor demultiplexing an audio pack in which audio data is recorded and an RTI pack in which additional data is recorded, from the read AOBU" – demultiplexer 86 extracts audio packs 230 and RTI packs 231; RTI packs 231 contain RTI data (including text information, tempo information 53 and beat information 54) (column 9, lines 22 to 46: Figures 1 and 4);

"an audio signal processor decoding the audio pack demultiplexed by the demultiplexor to output the audio data stored in the audio pack" – audio decoder 93 decodes audio information from audio packs 230 (column 9, lines 22 to 46: Figures 1 and 4);

"an RTI signal processor decoding the RTI pack demultiplexed by the demultiplexer to output additional data stored in the RTI pack in relation to the audio data from the audio pack" – RTI decoder 96 decodes RTI data output from demultiplexer 86 to provide beat information (column 9, lines 22 to 46: Figures 1 and 4).

Concerning independent claims 30 and 51, one skilled in the art would know that still picture, video detector pack 3A and audio, RTI pack detector 9 are equivalent to a demultiplexor, and control unit 23 is equivalent to a reproducing controller in *Tanaka et al.* (Figure 94) However, *Ema et al.* teaches a related apparatus and method of reproducing music together with information representing beat of music, where a reproducing apparatus enables generation of a signal representing tempo of music. (Column 5, Lines 3 to 8) It would have been obvious to one having ordinary skill in the art to include the elements of an audio reproducing processor as taught by *Ema et al.* in

the signal processing apparatus of *Tanaka et al.* for the purpose of reproducing beat information for music.

Concerning claims 8, 23, and 33, *Tanaka et al.* discloses that an audio control pack A-CONT, corresponding to a real-time information (RTI) pack is in a first location with respect to an ACBU, but in a third position with respect to a VCBU. (Figures 13 and 48) Thus, embodiments are disclosed where an A-CONT pack or an RTI pack is offset by two units from a cell head. It is a matter of design choice exactly where an A-CONT pack or RTI pack is located in a cell N. *Tanaka et al.* suggests an A-CONT pack may be located at a first or third position for each cell, but does not expressly disclose placing an A-CONT pack in a second position. However, variable offset would be an obvious expedient of design choice, in the absence of unexpected results. The most logical place to put a control pack would be in a first position, but as *Tanaka et al.* also suggests putting a control pack in a third position, it would be an obvious expedient to place a control pack in a second position, as a matter of design choice, in the absence of unexpected results.

Concerning claim 31, *Tanaka et al.* discloses each audio control pack A-CONT stores managing information representing a title and a play time (column 20, lines 10 to 19); audio search data (ASD) has playback time of a related track and an absolute time of the related title (column 19, lines 11 to 35: Figure 18); real-time information is read from real-time information packs RTI to display audio character display information (column 58, lines 21 to 34), thus, titles are displayed as text when recording units corresponding to the titles are played.

Concerning claim 32, *Tanaka et al.* discloses that control data may be real-time information, so audio control packs A-CONT correspond to real-time information packs RTI (column 57, line 58 to column 58, line 34: Figure 94); each ACBU or VCBU has a plurality of audio packs A (Figures 13, 19, 48, and 49); an audio control pack A-CONT is located in a first position in each ACBU (Figures 13, 19, 48, and 49).

Response to Arguments

Applicants' arguments filed 21 June 2006 have been fully considered but they are not persuasive.

Applicants argue that *Pinder et al.* does not, in fact, disclose the subject matter of independent claims 1, 16, 30, 48, and 51, "wherein at least one of the data [or RTI] packs does not include the additional data." Applicants note that *Pinder et al.* teaches a technique called "packet stuffing," which is a technique used to fill unused or excess capacity by inserting all ones (1), all zeros (0), or pseudo-random 1's and 0's. Applicants say that *Pinder et al.* discloses (a) filling an unused or excess capacity space with some type of data with the objective of maintaining a fixed bit rate. However, Applicants contend that the independent claims recite data packs designated to store additional data related to the audio data, wherein at least one of the data packs does not include the additional data. Applicants maintain that, in other words, at least one of the data packs is empty for the recited independent claims. This position is traversed.

Claiming that at least one of the data, or RTI, packs does not include the additional data is not necessarily the same as saying that at least one of the data packs

is empty. Clearly, data packs that do not contain the additional data do not necessarily have to be empty. Here, data, or RTI, packs relate to packs having additional information that is distinct from audio data recorded in recording units. Applicants' additional information in data, or RTI, packs can relate to any control information, or to information supplementing the audio data. Information supplementing the audio data could be information related to the timing or duration of the audio data, or could be information related to real-time text data of a song lyric or composer. (Specification, Page 6, Lines 23 to 27 and Page 8, Lines 3 to 6) However, anything that is not the additional data could remain in a data, or RTI, pack, and still meet the terms of the claim limitations "wherein at least one of the data [or RTI] packs does not include the additional data." *Pinder et al.* teaches that it is well known to provide packet stuffing for audio coding in an MPEG standard, where excess capacity space is filled by all ones (1), all zeros (0), or pseudo-random 1's and 0's. It is maintained that a data, or RTI, pack containing all ones (1), all zeros (0), or pseudo-random 1's and 0's would meet the terms of the claim limitations because any of all ones (1), all zeros (0), or pseudo-random 1's and 0's are not the additional data relating to timing, duration, or real-time text of a song lyric or composer. Thus, packet stuffing does not place any of the additional data into any data, or RTI, pack.

Nor would it be clear what would be encompassed by saying that a packet is empty. Presumably, an empty packet would not include any data of any kind, but a packet must still contain a structure denoting the beginning or ending of the packet, *e.g.* a packet header and packet trailer, or the packet would not exist at all. Indeed, *Pinder*

et al.'s packet stuffing is precisely what is needed to maintain a structure for any empty packet. Packet stuffing provides a standard of what constitutes an empty packet by defining an empty packet as containing all ones (1), all zeros (0), or pseudo-random 1's and 0's.

Pinder et al. is cited to show that audio and video packets may commonly be empty in a packet stuffing format for MPEG. Applicants' Specification does not expressly disclose why data, or RTI, packs might be empty; the Specification merely posits that some data, or RTI, packs may have no data recorded, when no additional data is to be reproduced in relation to an audio pack. (Specification, Page 6, Lines 7 to 9) By implication, some data, or RTI, packs just have no additional information as an artifact of a given data stream because there is not enough information associated with a program or the information is redundant. Figure 6 of *Pinder et al.* shows that an incoming bit stream includes MPEG table packets 801, stuffing packets 802, and content information 803. The content information 803 relates to programming information such as video packets, audio packets, and data packets. (Column 11, Lines 22 to 43: Figure 6) Thus, *Pinder et al.*'s content information 803 corresponds to Applicants' claimed recording units; MPEG table packets 801 correspond to Applicants' claimed data, or RTI, packs containing additional data related to the audio data. *Pinder et al.* says that a transport steam 302 is more than just a multiplex of audio and video packets, but that there is a great deal of information that describes the bit stream. MPEG Tables contain information associated with a particular program. (Column 7, Lines 20 to 33) However, Figure 6 of *Pinder et al.* illustrates that a stuffing packet 802

directly follows at least two MPEG table packets 801 before content information 803 in an incoming bit stream. Thus, it is suggested that there needs to be a stuffing, or empty, packet 802 just following an MPEG table packet 801 to maintain a predetermined bit rate. A stuffing packet 802 is at least one data, or RTI, pack that does not contain additional information relating to MPEG Tables, or information associated with a particular program.

Therefore, the rejections of claims 1 to 7, 16 to 22, 48, and 49 under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.*, and of claims 8, 23, 30 to 33, and 51 under 35 U.S.C. 103(a) as being unpatentable over *Tanaka et al.* in view of *Pinder et al.*, and further in view of *Ema et al.*, are proper.

Conclusion

THIS ACTION IS MADE FINAL. Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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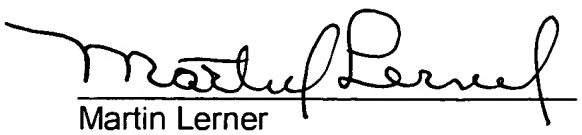

Martin Lerner
Examiner
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